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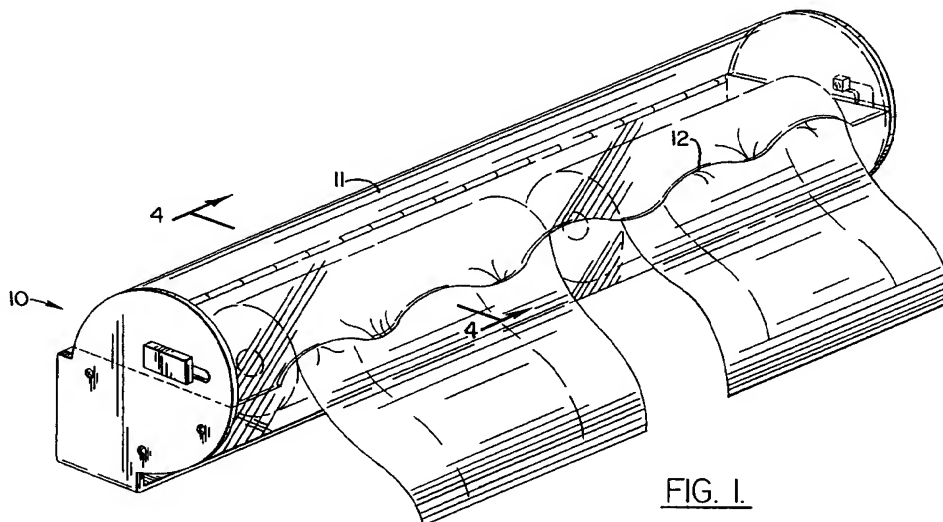
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London EC4A 1BQ (GB)(54) **Plastic bag dispensing apparatus.**

(57) For serially dispensing flexible plastic bags or the like from a wound package in which the bags are joined along perforated severance lines a housing (10) defines a confining chamber adapted to receive and confine the wound package of bags for unwinding during dispensing of bags therefrom. The housing (10) has a bag dispensing, elongate, narrow slot

(12) through which individual bags may be serially drawn and dispensed. The slot (12) has a smoothly curving, sinuous profile longitudinally thereof so that the bags may be smoothly drawn from the housing and separated along the perforated severance lines with the next bag being retained by the sinuous slot in position for dispensing.

**FIG. 1.****EP 0 569 641 A1**

The present invention relates to an apparatus for serially dispensing flexible plastic bags which are joined along perforated severance lines.

The use of plastic bags, normally in the nature of t-shirts or handle bags, has become increasingly popular, particularly in grocery stores and the like. Such plastic bags may be provided to users thereof in various and sundry ways, such as from a stack of bags, or from rolls of bags in which the bags are joined along perforated severance lines. Typically, the rolls of bags are positioned at various accessible locations adjacent points of intended use. The mounting means for such rolls have usually taken the form of either vertically or horizontally mounted spindles upon which the wound rolls are freely mounted. A user withdraws an individual bag from the roll, but then must grasp the roll to prevent other bags from being unrolled therefrom as the user tears the severance line to remove the individual bag.

Commonly owned U.S. Patent Nos. 4,793,539 and 4,930,385 to Haenni et al. and Wilfong et al. disclose apparatus for serially dispensing plastic grocery bags or the like from a supply roll which consists of bags serially joined along perforated severance lines. These patents further disclose dispensing nozzles having slots of a zig-zag or sawtooth configuration through which the bags are threaded to be withdrawn. The zig-zag or sawtooth slot exerts sufficient resistance upon the bags as they are serially withdrawn or dispensed through the slot so as to hold the penultimate bag in position while the perforated severance line is fractured to remove the last bag.

While the plastic bag dispensing apparatus disclosed in the above-referenced patents represent a significant advance in the art, certain limitations in use have been noted. Specifically, the plastic bags withdrawn through the nozzles disclosed in these patents are gathered or bunched by the zig-zag slots such that the dispensed bags look used and are crumpled. While such used or crumpled appearance does not detract from the utility of the bags, the appearance is important since some customers may object thereto. Additionally, the sharp corners of the zig-zag or sawtooth slots have a tendency to exert undue localized pressures upon the bags being withdrawn or dispensed therethrough.

It is accordingly an object of the present invention to provide a plastic bag dispensing apparatus which overcomes the limitations and disadvantages heretofore encountered with plastic bag dispensing apparatus.

It is a more specific object of the present invention to provide a plastic bag dispensing apparatus which permits the bags to be withdrawn or dispensed from the apparatus in a flat state and in

a smooth fashion without any undue localized pressure being exerted on the bags being dispensed.

These objects of the present invention are achieved in the embodiment illustrated herein by the provision of a housing defining a confining chamber adapted to receive and confine therein at least one wound package or roll of bags which are joined along perforated severance lines. The housing has an elongate narrow slot therein through which individual bags may be serially drawn and dispensed. The slot has a smoothly curving, sinuous profile longitudinally thereof and is of a width relative to the thickness of the bags such that withdrawal of the bags through the slot is frictionally retarded or resisted. This resistance facilitates the severance of the leading bag from the immediately following bag joined thereto along the perforated severance line. The profile and length of the slot permit the individual bags to be withdrawn and dispensed in a flat, non-crumpled form, and the smoothly curving sinuous profile of the slot permits withdrawal and dispensing of the bags without any undue localized pressure being applied to the bags being dispensed.

Some of the objects and advantages of the present invention having been stated, others will appear as the description proceeds, when taken in conjunction with the accompanying drawings, in which

Figure 1 is a perspective view of a preferred practical embodiment of the bag dispensing apparatus of the present invention illustrating the apparatus in use;

Figure 2 is a view similar to Figure 1 illustrating the cover of the housing in open position for receipt of wound rolls of bags therein;

Figure 3 is a view similar to Figure 1 of the apparatus shown in Figures 1 and 2 as seen from the bottom thereof;

Figure 4 is a sectional view taken substantially along line 4-4 in Figure 1;

Figure 5 is an enlarged detail view of the latching means for the cover of the dispensing apparatus in closed position; and

Figure 6 is a detail view, like Figure 5, with the latching means in open position.

Referring more particularly to the drawings, there is illustrated a dispensing apparatus generally indicated at **10** for serially dispensing plastic grocery bags or the like from at least one wound roll **R** of such bags serially joined along perforated severance lines. The housing **10** includes a body portion **11** which is preferably cylindrical in form and of a diameter and length to receive and confine therein a plurality of wound rolls **R** and **R'** of serially connected bags to be dispensed. The cylindrical body portion **11** defines therewithin a chamber which receives and confines the rolls of

bags **R** and **R'** and mounts the rolls for rotation within the chamber as bags are serially withdrawn from the dispensing apparatus **10**.

Body portion **11** has an elongate, narrow slot **12** formed therein through which individual bags may be serially drawn and dispensed. The slot **12** has a width relative to the thickness of the bags being dispensed such that withdrawal of the bags through the slot **12** is frictionally retarded or resisted to assist in separation of the leading bag from the immediately following bag along the perforated severance line connecting the two and to hold the immediately following bag in position for subsequent withdrawing and dispensing once the leading bag has been removed.

Preferably, the housing body portion **11** is formed by a lower body member **13** and an upper body member **14**. Lower body member **13** is stationary, and upper body member **14** is hingedly mounted on lower body member **13** by a hinge **15** which preferably extends throughout the length of the lower and upper body members **13**, **14**.

Lower and upper body members **13** and **14** preferably comprise a half-cylinder closed at their opposite ends by end caps **13a**, **13b** and **14a**, **14b**. The rearward edges **13c**, **14c** of the lower and upper body members **13** and **14** are substantially straight while the forward edges **13d**, **14d** thereof are formed in smoothly curved, sinuous, mating profiles which define the slot **12** when upper body member **14** is in closed position. Preferably, the sinuous profile of slot **12** comprises a sine wave.

A bracket means **20** is mounted on lower body member **13** for mounting of the dispensing apparatus **10** on any suitable accessible surface adjacent to the location where the bags are to be withdrawn and used. Bracket means **20** comprises end cap members **21**, **22** mounted on opposite ends **13a** and **13b**, respectively, of lower body member **13** by suitable screws **23**. End cap members **21** and **22** have formed integrally therewith a connecting member **24** extending longitudinally beneath lower body member **13** in spaced relation thereto. Connecting member **24** has suitable screw holes **25** formed therethrough for receipt of suitable mounting screws (not shown).

Latching means is provided for latching the upper body member **14** in closed position. Such latching means comprises slidable latches **26**, **27** mounted in elongate slots **30**, **31** in end cap members **21** and **22** of bracket means **20**, respectively. The end caps **14a** and **14b** of upper body member **14** have suitable bayonet slots **32**, **33** formed therein for receipt and locking cooperation with latches **26** and **27**, respectively.

While the housing **11** may be formed of any suitable material, it is preferred that the cylindrical housing **11** be formed of clear plastic capable of

withstanding the shocks and wear normally associated with the extended use of the apparatus to contain and dispense plastic bags therefrom. Preferably bracket means **20** is formed of a high impact plastic of any suitable color.

In operation, the dispensing apparatus **10** is mounted on a suitable supporting surface at a location adjacent to the point where the plastic bags are to be used by screws being inserted through holes **25** in connecting member **24** or by any other suitable attachment means. Latch members **26** and **27** are then moved to the unlatched position and upper body member **14** is pivoted from the closed position to the open position.

Wound rolls of bags **R** and **R'** are then positioned within lower body member **13** with the leading ends of the wound rolls of bags resting on the sinuously curved forward edge **13d** of lower body member **13**. The rolls of bags to be dispensed may be of the same type bags or of different type bags having different characteristics for bags suitable for use at the location where the dispensing apparatus **10** is mounted.

Once the wound rolls of bags **R** and **R'** are properly positioned within lower body member **13**, upper body member **14** is pivoted from the open position to the closed position, and latch members **26** and **27** are moved rearwardly to the latched position. The smoothly curved sinuous profile lower forward edges **13d** and **14d** of lower and upper body members **13** and **14** defining slot **12** frictionally grip the leading bags therebetween.

Individual bags may then be smoothly and evenly withdrawn from the rolls **R** or **R'** through the slot **12** while such withdrawal is being frictionally retarded or resisted. Once the leading bag has been fully withdrawn from the dispensing apparatus **10**, the same may be removed from the immediately following bag by tearing along the perforated severance line. The sinuous curved nature of the slot **12** facilitates withdrawal of the bags in a flat, non-crumpled form and also insures that no excessive localized pressure is applied to the bags during withdrawal thereof.

In the drawings and specifications, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation.

Claims

1. A dispensing apparatus adapted for serially dispensing flexible plastic bags or the like from a wound package (**R**, **R1**) in which the bags are joined along perforated severance lines, said apparatus comprising a housing (**10**) defining a confining chamber adapted to receive

and confine therein a wound package of bags for unwinding during dispensing of bags therefrom, and a bag dispensing, elongate, narrow slot (12) in said housing through which individual bags may be serially drawn and dispensed, **characterised in that** the said slot has a smoothly curving, sinuous profile longitudinally thereof whereby bags may be smoothly drawn from said housing and separated along the perforated severance lines with the next bag being retained by the sinuous slot in position for dispensing.

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10

2. A bag dispensing apparatus according to Claim 1 wherein said housing (10) includes a mounting bracket (20) for mounting said bag dispensing apparatus in a suitable accessible location. 15
3. A bag dispensing apparatus according to Claim 1 or 2 wherein said housing (10) encloses the wound package (R, R1) of bags and includes an access opening into said chamber and movable cover means (14) for selectively closing and opening said access opening. 20 25
4. A bag dispensing apparatus according to Claim 1, 2 or 3 wherein said slot (12) has a width relative to the thickness of individual bags such that withdrawal of the bags is frictionally retarded. 30
5. A bag dispensing apparatus according to any preceding claim wherein said slot (12) has a sine wave profile. 35
6. A bag dispensing apparatus according to any preceding claim wherein said housing (10) comprises upper and lower body members (14, 13), the upper body member (14) being openable and the front edges of said upper and lower body members defining said slot (12) when said upper body member (14) is in closed position. 40 45
7. A bag dispensing apparatus according to Claim 6 wherein said housing (10) includes latch means (26, 27, 30, 31) securing said upper body member (14) in closed position. 50
8. A bag dispensing apparatus according to any preceding claim wherein said housing has a length sufficient to receive and confine a plurality of wound packages of bags (R, R1) and said slot (12) extends longitudinally substantially throughout the length of said housing. 55

9. A bag dispensing apparatus according to any of Claims 1 to 7 wherein said slot (12) is at least as long as the length of the wound package of bags mounted by said housing (10).

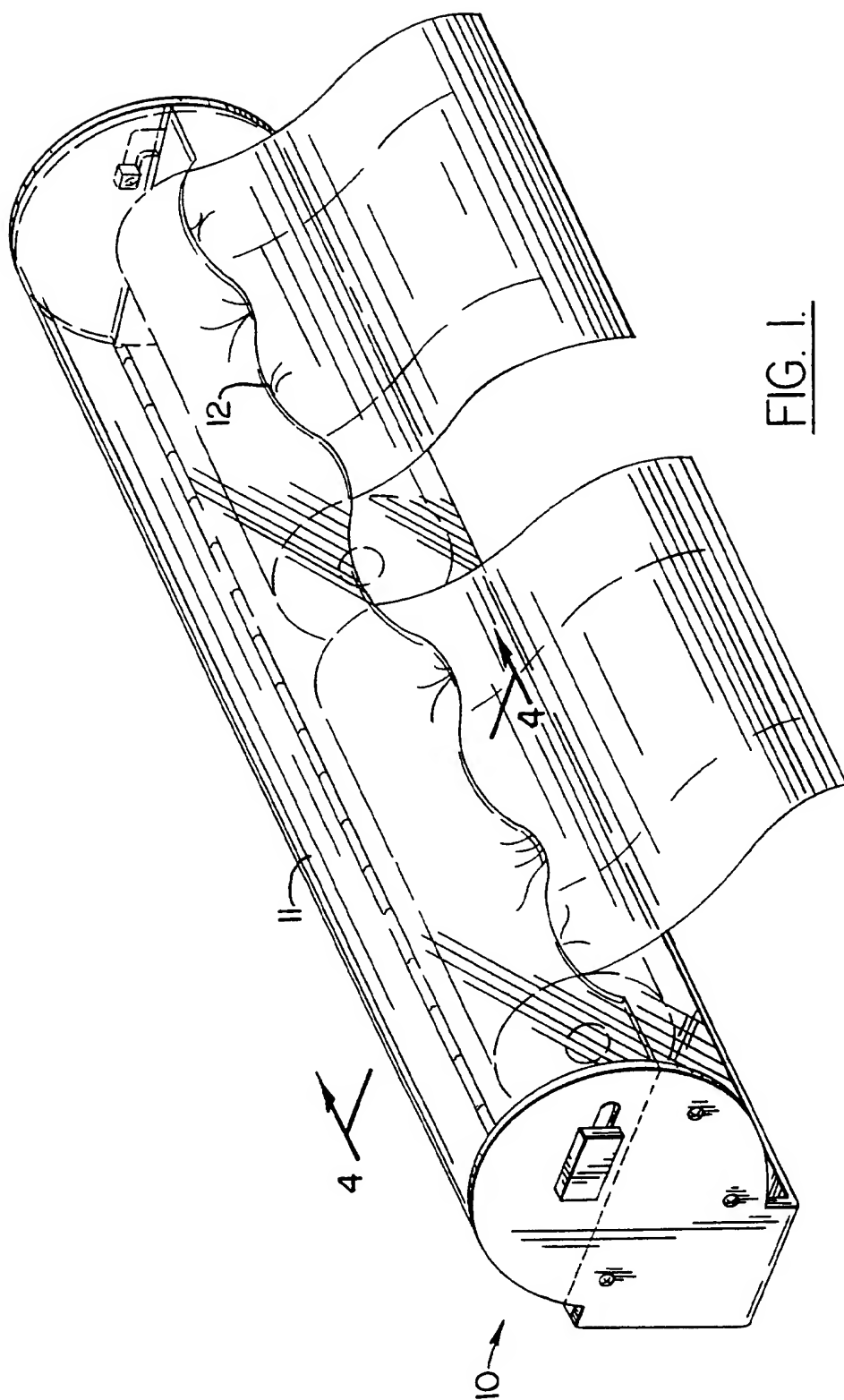


FIG. 1.

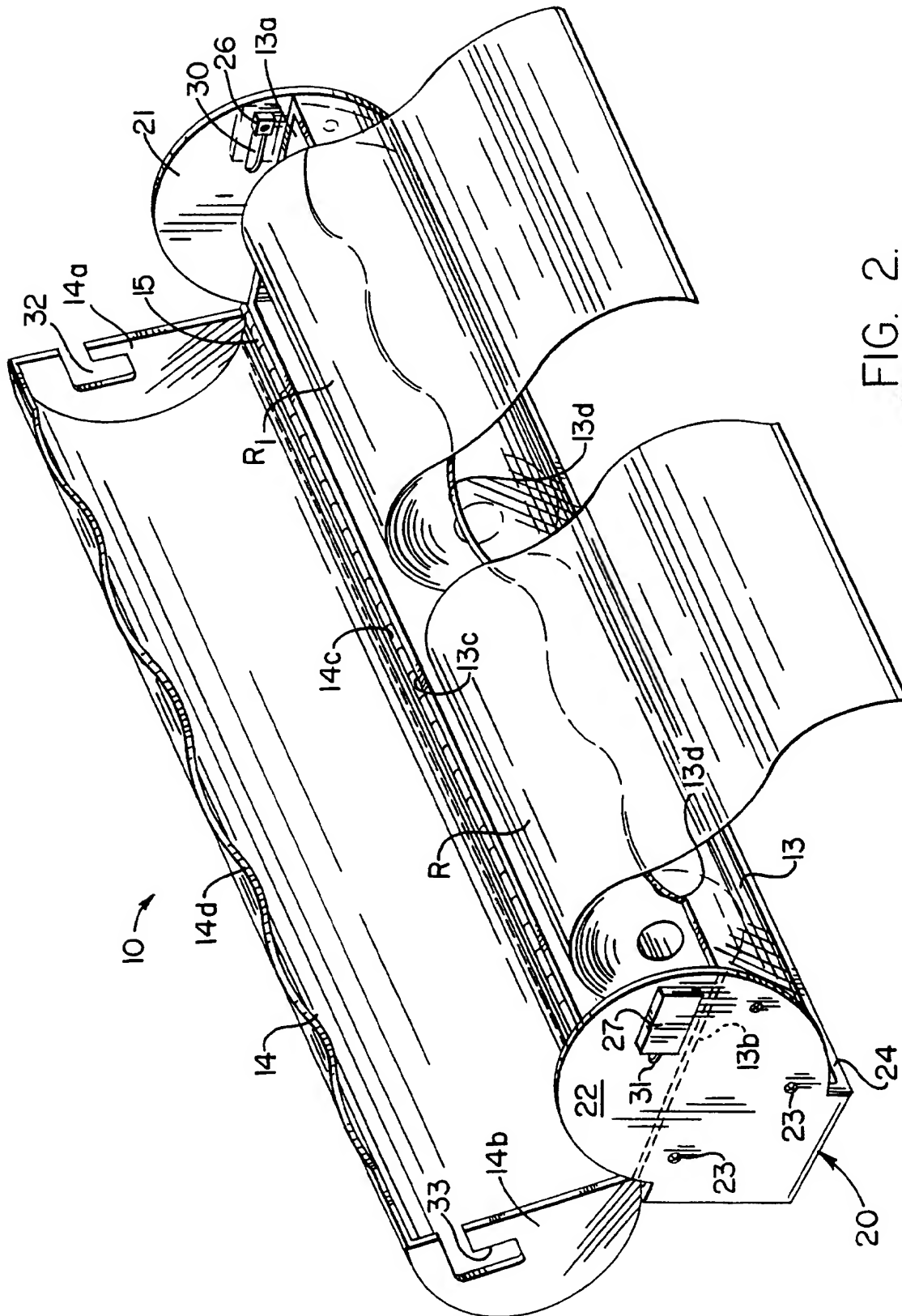
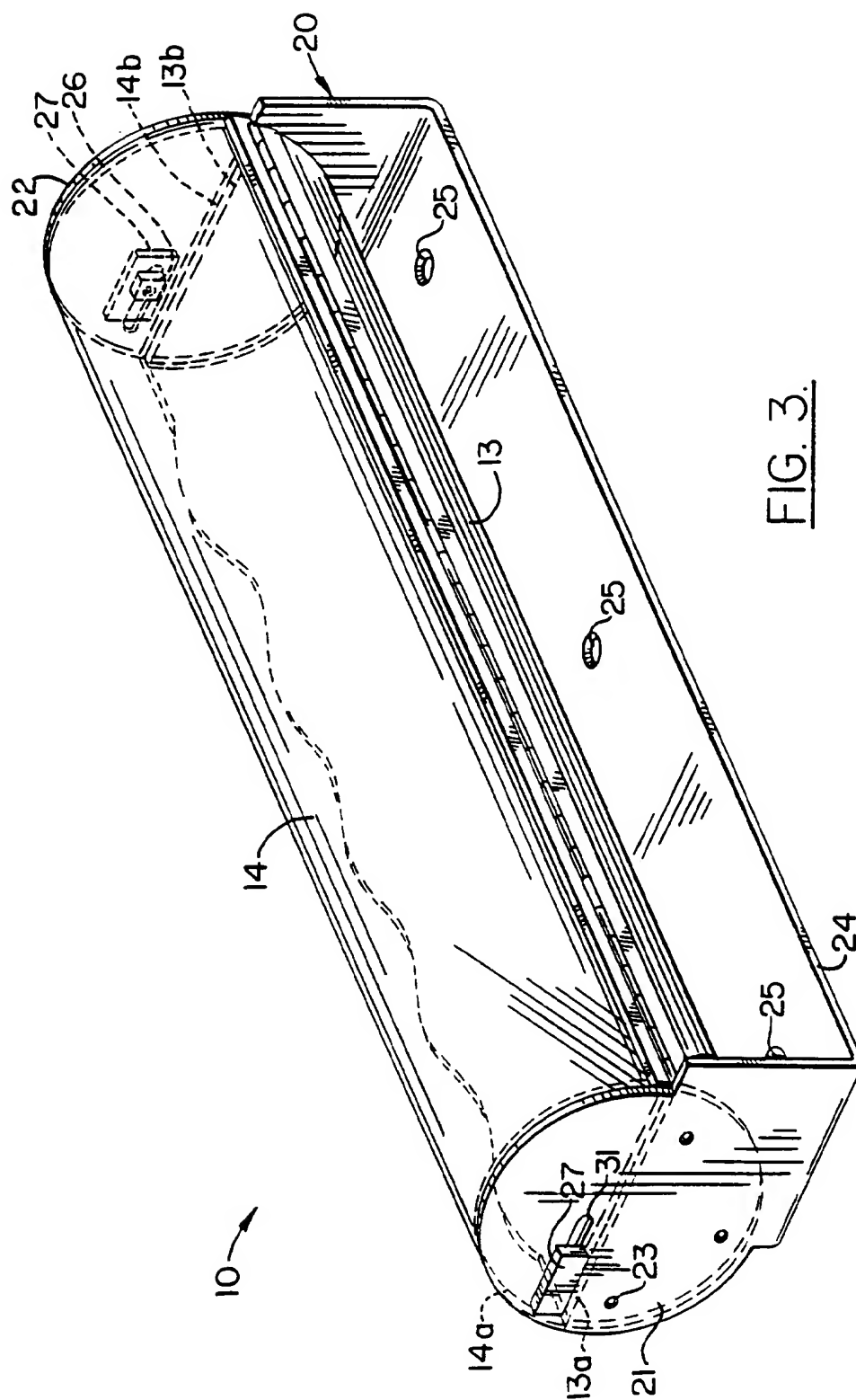


FIG. 2.



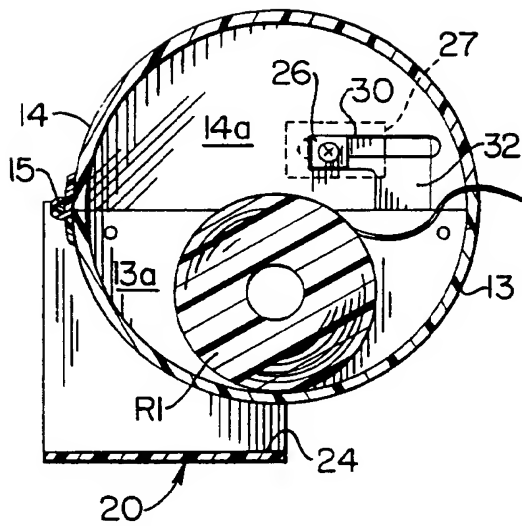


FIG. 4.

FIG. 5.

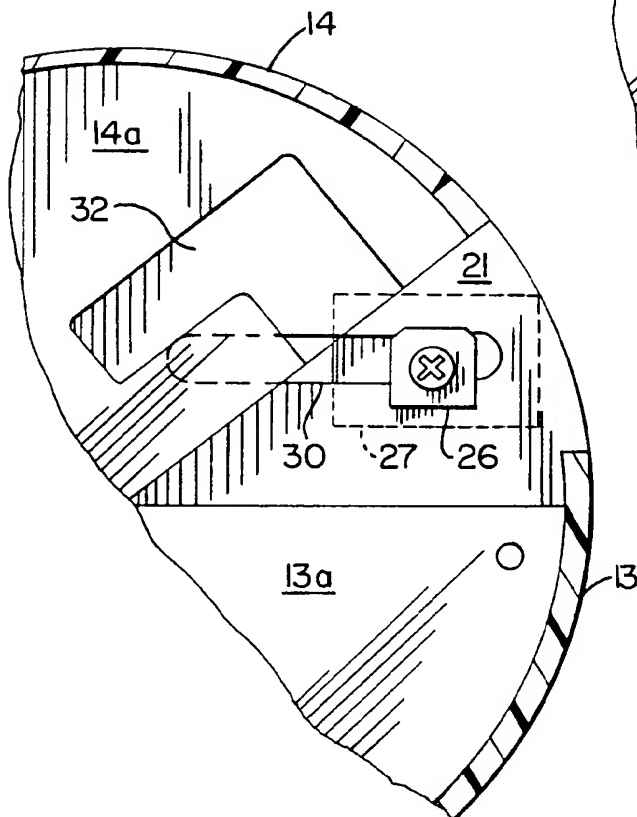
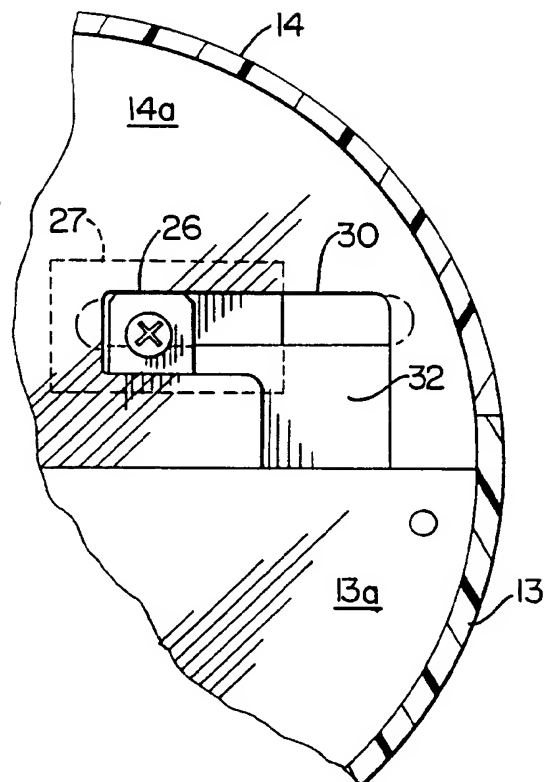


FIG. 6.



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EUROPEAN SEARCH REPORT

Application Number

EP 92 30 7940

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	GB-A-946 077 (NATIONAL DISTILLERS AND CHEMICAL CORP.)	1,3-7,9	A47F9/04 B65D33/00 B65D83/08 B65H35/00
Y	* page 1, line 38 - line 45; figure 7 *	2,8	
A	US-A-2 840 266 (NELSON) * column 1, line 53 - column 3, line 57; figures *	1,5	
Y	US-A-5 111 985 (LAPEYRE)	2	
A	* column 2, line 30 - column 3, line 37; figures *	6	
Y	EP-A-0 419 735 (SCHÖN) * figure 1 *	8	
A	DE-U-8 712 163 (GRÜBEL) * abstract; figures *	1,2,6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A47F B65D B65H A47K
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 07 JANUARY 1993	Examiner DE GROOT R.K.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	